

## ABSTRACT

A virtualizer module/element and a networked storage controller architecture with a virtualization layer that includes virtualizer modules. The virtualizer modules contain storage controller functionality as well as a cache subsystem. The virtualizer module processes primary data commands received from a host processor to determine if the cache subsystem of the virtualizer can service the data request or if it should be sent to a command mapper to retrieve the data from a downstream storage element. The cache subsystem of the virtualizer module thus enables reduced latency in the networked storage system as well as better management of storage devices and resources. The virtualizer module also facilitates predictive reads and read-ahead operations as well as coalesced write requests to a given storage device in order to increase system performance and storage device longevity.